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THE EFFECTS OF LABOR FORCE, DEMOGRAPHIC, AND SOCIAL TRENDS ON FUTURE MILITARY MANPOWER DIRECTIONS

by

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December 1990

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The Effects of Labor Force, Demographic, and Social Trends on Future Military Manpower Directions

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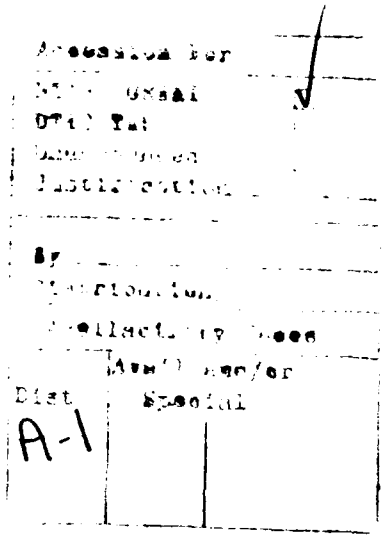

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ABSTRACT

The lessening of tensions between the United States and the Soviet Union have brought about projected reductions in defense spending and attendant manpower drawdowns. However, manpower analysts and policymakers in the Department of Defense and the services' secretariates are faced with frequent changes in world events--witness Iraq's invasion of Kuwait--that portend threats to the interests of the United States. At the same time, the supply--and demographic complexion--of American youth that is available to fill manpower needs is changing.

This thesis examines changing labor force, demographic, and social trends into the early 21st century, focusing on 18 to 24 year-olds--the military's traditional source of accessions. Census Bureau, Bureau of Labor Statistics and Defense Manpower Data Center statistics are used, along with recent legislation, to make projections concerning the availability of quality youth for the services' recruiting efforts. Recommendations are made concerning policies to continue attracting and retaining quality personnel for the "high tech" military of the future.

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I. INTRODUCTION

A. BACKGROUND

Determining military manpower demands for the 1990s, and how they will be met, is directly related to perceived threats to the national security and the composition of the armed forces required to protect our interests. Manpower analysts and policymakers in the Department of Defense (DOD) and the services' secretariates are faced with frequent changes in world events and attendant threats to our national security. At the same time, the supply--and demographic complexion--of American youth that is available to fill manpower needs is changing.

B. ANALYSIS

Few prognosticators, if any, anticipated the events of late 1989 in Eastern Europe and the Soviet Union. The fall of the Berlin Wall, adoption of democratic political systems in Poland, Czechoslovakia and Hungary, and the reunification of Germany have altered our perception of the primary threat to our national security. Development of a nuclear triad to counter the Soviet Union and the Warsaw Pact had demanded substantial numbers of ballistic missile submarines, land-based intercontinental ballistic missiles (ICBMs) and manned bombers. Significant land forces supported by armor, artillery, attack aircraft, and carrier battle groups also

were needed to protect Western Europe. Those same carrier battle groups and Marine amphibious groups were to serve as "policemen" to counter smaller threats to the nation's interests abroad.

With the apparent demise of both the Soviet Union and the Warsaw Pact as a threat to the United States and its allies, a "peace dividend" was anticipated by many Americans. The fears of a decline in the youth population impacting directly on recruiting and retention efforts seemed to be passe. Indeed, as 1990 dawned, few expected that Iraq would invade Kuwait in August, bringing the threat of a major land war to the Arabian peninsula. With of tensions in one venue and an intensifying of tensions in another, what course will U. S. defense strategy be taking in the next decade? Answering this question is of paramount importance in determining future manpower requirements, and it is one of the primary issues addressed in this thesis.

Military manpower demands and the composition of defense forces are based on DOD's Total Force Policy and can be directly related to budget dollars and Congressionally-mandated endstrengths. [Ref. 1:p. II-1] The process that leads to that outcome is complex, however. Threat assessment begins in the Planning, Programming and Budget System (PPBS) of the Department of Defense. Concurrence with the Joint Chiefs of Staff and the services' secretariates results in Program Decision Memoranda, which are submitted to the

executive branch for consideration in the President's defense budget. The legislative process involved in final approval of the budget is tedious and may result in significant changes, particularly in major spending programs. As of the writing of this paper (late 1990), the Congress has mandated manpower endstrength reductions for all of the services for fiscal 1991, with further projected reductions through fiscal 1995. As Tables 1.1a and 1.1b illustrate, force reductions of almost five percent are mandated for fiscal 1991, with cumulative projected reductions of around twenty-two percent by fiscal 1995. The Army and Air Force are hardest hit of the four services, which is a reflection, in part, of conventional force reductions in Europe.

TABLE 1.1a

MILITARY FORCE LEVELS BY SERVICE, FISCAL 1990 AND 1991

	FY 90	FY 91	REDUCTION	% CHANGE
Army	744,170	702,170	42,000	- 5.6
Navy	590,500	570,500	20,000	- 3.4
Air Force	545,000	510,000	45,000	- 6.4
Marine Corps	196,735	193,735	3,000	- 1.5
Totals	2,076,405	1,976,405	100,000	- 4.8

Source: House and Senate Armed Services Committees, Fiscal 1990 and 1991 Defense Appropriation Bills

TABLE 1.1b

MILITARY FORCE LEVELS BY SERVICE,

FISCAL 1990 AND 1995

	FY 90	FY 95	Reduction	% Change
Army	744,170	520,000	224,170	- 30.1
Navy	590,500	501,000	89,500	- 15.2
Air Force	545,000	415,000	130,000	- 23.9
Marine Corps	196,735	177,000	19,735	- 10.0
Totals	2,076,405	1,613,000	463,405	- 22.3

Source: House and Senate Armed Services Committees, Fiscal 1990 and 1991 Defense Appropriation Bills

While tensions have intensified in the Persian Gulf region, it is too early to prognosticate what effects this conflict might have on projected manpower reductions beyond fiscal 1991, especially since events are fluctuating on almost a daily basis.[1] Nonetheless the mood of the country, and the sense of Congress, at the writing of this paper suggests that military manpower requirements will continue to decline for the next several years. The Persian Gulf crisis may delay or slow the decline, but is unlikely to reverse it. Consequently, meeting those requirements in the face of a

[1]In the short run this will depend on whether a war breaks out in the region. In the long run it depends on whether the U.S. and its allies, or the U.N., decide to maintain a permanent peacekeeping force in Saudi Arabia.

declining youth population--while maintaining the quality[2] necessary to man an increasingly technologically advanced military--remains an important issue to address. The Department of Defense has attracted higher quality recruits in the last decade, and has a goal of maintaining or improving the quality of military personnel to sustain better training, performance, and improved readiness. [Ref. 1:pp. III-8 and IV-10]

For manpower analysts and decision makers, the lesson is clear. If the United States is to remain a "superpower," it must be prepared to respond to threats to our national security short of nuclear war. The requirement for sizable numbers of ground forces that can be mobilized quickly with adequate firepower and air support is crucial in responding to limited, "low-intensity" conflicts. [Ref. 2:pp. 172-191] The ability to project power ashore--particularly in Third World arenas--should remain a hallmark of our national defense strategy. To Captain Dick Diamond, USN, head of the Strategy and Concept Branch of Naval Operations (OP-603), "The 1990s version of the national military strategy will emphasize the importance of conventional deterrence and responding quickly to occasional conflicts with troublemakers around the globe." [Ref. 3:p. 18]

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[2]A "quality" recruit is defined as one who possesses a high school diploma and scores at or above the 50th percentile on the Armed Forces Qualification Test (AFQT).

Projections to the year 2000 indicate that manpower resources for the military are undergoing substantial change. Given proposed force drawdowns, the decreasing number of 18 to 24 year-olds--the military's primary recruiting population--has not been considered to present a problem. On the other hand, recent events in the Persian Gulf region have cast some uncertainty on the feasibility of precipitously reducing the active-duty military. Should the military be faced with manpower requirements less than those of the mid- to late-eighties, though, there still remains the question of attracting and retaining highly qualified personnel from a shrinking pool of potential accessions.

Immigration, particularly of Asians and Hispanics, will become a major source of future labor force growth. In addition, disadvantaged youth will become a greater proportion of the 18 to 24 year-old pool. [Ref. 4:pp. 66-73] As the military moves toward the 21st century, increased technology--in weapons and support equipment--will demand well-educated technicians to sustain readiness. These demands will be mirrored in the private sector, as the economy shifts from a heavily industrial and manufacturing mode to one that is service-oriented. [Ref. 4:pp. 24-26] Consequently, it will be more difficult than ever for the military to compete for quality personnel in the years to come.

The perceptions that youth have about the military are more nebulous, but also exercise a significant impact on

recruiting and retention efforts. In an era of budget crisis and force drawdowns, service in the military may not be perceived as representing a stable career. On the other hand, crises--such as the one in the Persian Gulf--can stimulate interest in the military if national policies are supported by a majority of the electorate. However, should the conflict begin in earnest, youth may be less inclined to enlist, and their parents less inclined to permit them to enlist, after seeing the carnage "up close and personal" on the nightly news.

Future retention issues also must be addressed. To ensure maintaining current retention levels, it will become increasingly important for the military to retain a positive impression regarding quality of life issues. Parity, or near-parity, with civilian wages and benefits, including the provision educational benefits, child care, remedial training, and retention/advancement opportunities will take on even greater importance. A perception that the advantages of a military career are less certain will make retention efforts very difficult, particularly if wages and retirement benefits have eroded.

C. FINDINGS

The widespread belief that a "peace dividend" is inevitable appears to be premature. There is no question, however, that defense spending will continue to decline over the next decade. In the wake of those reductions, we

cannot lose sight of the competition the military must face for quality personnel from private industry, colleges, universities and other civilian training providers. It is crucial, therefore, that disproportionate cuts not be made in those manpower-related programs that have made the All-Volunteer Force a success.

The purpose of this thesis, therefore, is to examine DOD manpower requirements--as projected through the year 2000--and to analyze and propose policies that will ensure meeting those requirements, given anticipated trends in a dynamic labor force, demographics of the population, and social values. The main purpose of the thesis is to review the known projections and trends, and to explore the possible implications for manpower procurement, retention, and force structure. It is expected that this study will assist policymakers responsible for recruiting and retention by identifying expected changes in manpower supply amd areas of future concern in both recruiting and retention policies. Proposals will be made not only for solutions to potential problems, but also for areas in which we feel further study is warranted.

II. HISTORICAL RECRUITING PATTERNS

A. PRINCIPLES OF SELECTION IN THE MILITARY

Recruits in the modern, All-Volunteer Force (AVF) must meet a variety of physical, mental, and moral qualifications. Although "brain" is not a sole substitute for "brawn", young people who apply to serve in the armed forces are subjected to rigorous testing in the form of the Armed Forces Qualification Test (AFQT). As discussed in the introduction, the services are continuing to attract high quality recruits, particularly as measured by the AFQT. Table 2.1 provides a break-down of AFQT Categories with corresponding percentile score ranges.

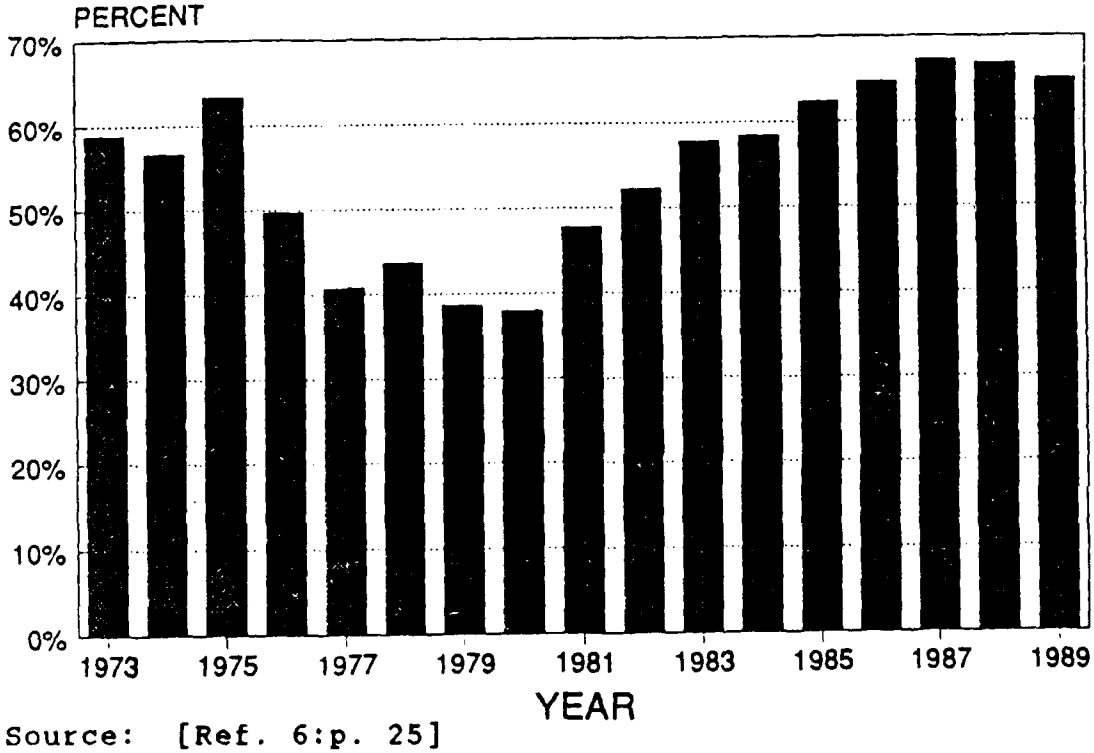
TABLE 2.1

ARMED FORCES QUALIFICATION TEST (AFQT) CATEGORIES AND CORRESPONDING PERCENTILE SCORE RANGES

AFQT Category	Percentile Score Range
I	93-99
II	65-92
IIIA	50-64
IIIB	31-49
IV	10-30
V	1-9

Source: [Ref. 6:p.24]

Since 1980, the percentage of accessions that fall in AFQT categories I through IIIA has risen from approximately 38 percent to 65 percent (Figure 2.1). This proportion of "quality" accessions is not expected to decline significantly, given the demands of an increasingly technological military. (Ref. 1:p. III-8]

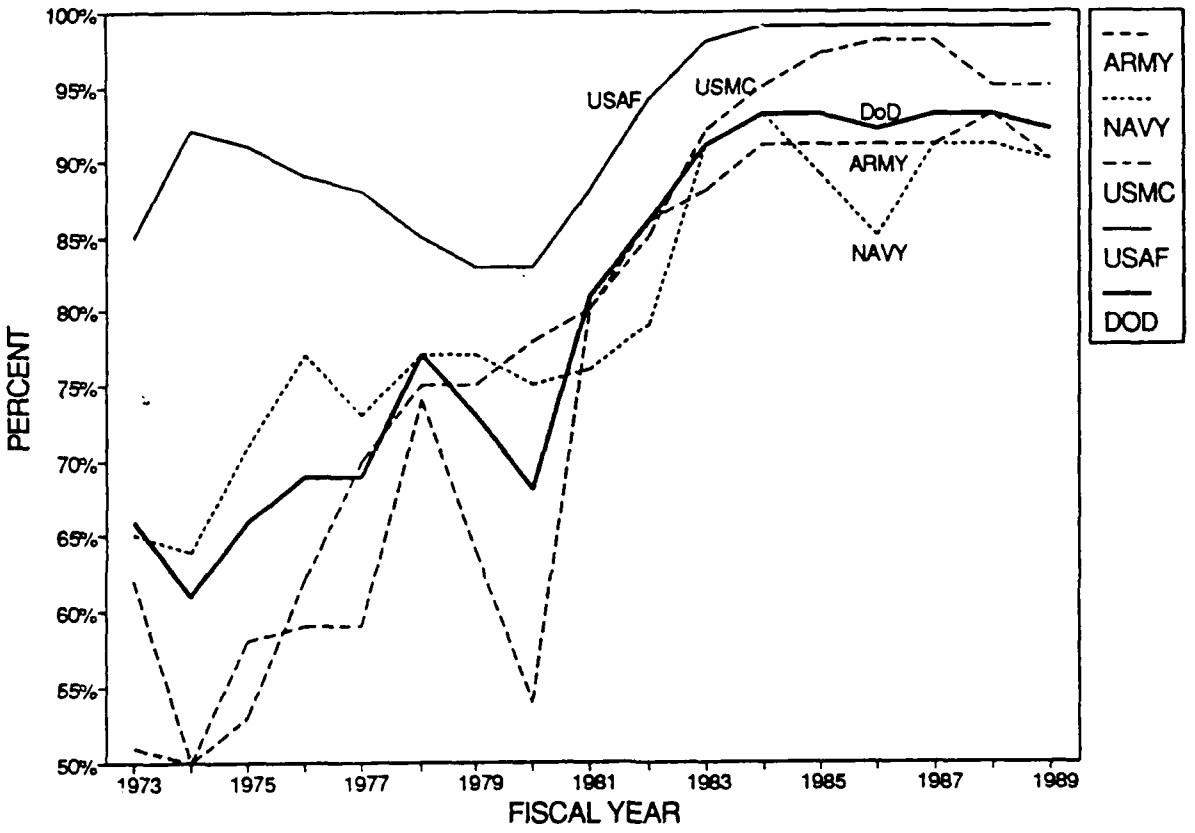


Source: [Ref. 6:p. 25]

Figure 2.1

Percentage of Non-Prior Service accessions in AFQT Categories I - IIIA Fiscal 1973 - 1989

Another measure of quality in a recruit is possession of a high school diploma. As Figure 2.2 illustrates, the proportion of high school diploma accessions has increased from approximately 70 percent to 90 percent DOD-wide, another indication of higher quality recruits in the military.



Source: [Ref. 6:p. 32]

Figure 2.2

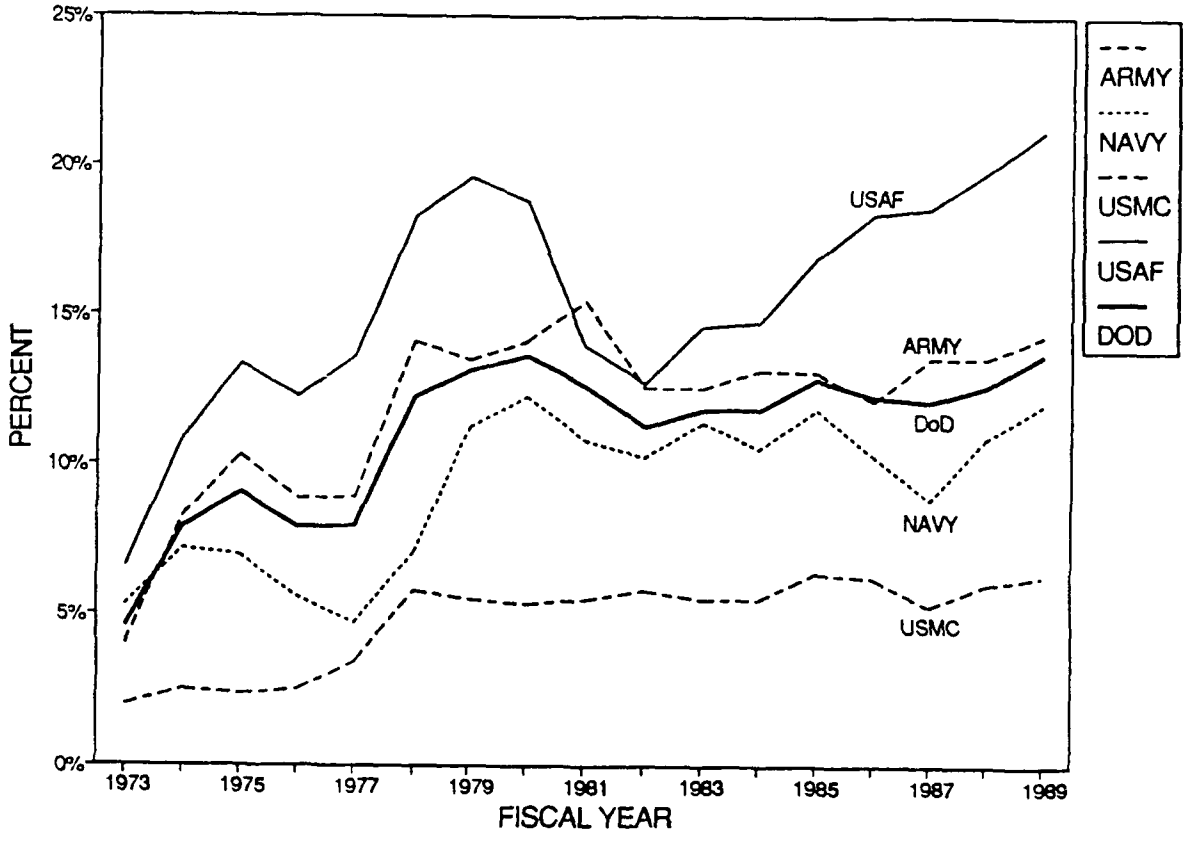
Percentage of Non-Prior Service accessions with a high school diploma, Fiscal 1973 - 1989

While the quality standards of new recruits is either increasing or--at the very least--holding steady own, it is important to remember that service in the armed forces is a responsibility. [Ref. 6:p. 1] While the draft era emphasized

the concept of the "citizen soldier" and an attendant duty to serve, the era of the (AVF) has tended to reduce stratification. No longer is the officer corps the sole preserve of white males; no longer are blacks and Filipinos able to serve only as stewards; no longer are women relegated to nursing and other "traditionally female" billets. In fact, the goal of the services today is to be representative of the populace as a whole within practical limits. This is in keeping with the view that sharing in the responsibility of national service should be borne by all members of society in a reasonably equitable manner. [Ref. 6:p. 3]

B. WOMEN AND MINORITIES

The birth of the (AVF) caused some concerns about possible shortfalls among male recruits. Increasing the role of women in the armed forces seemed to be a logical means to fill any shortfalls. As Figure 2.3 illustrates, representation by women DOD-wide has remained fairly constant for the last ten years, at between 12 and 13 percent.



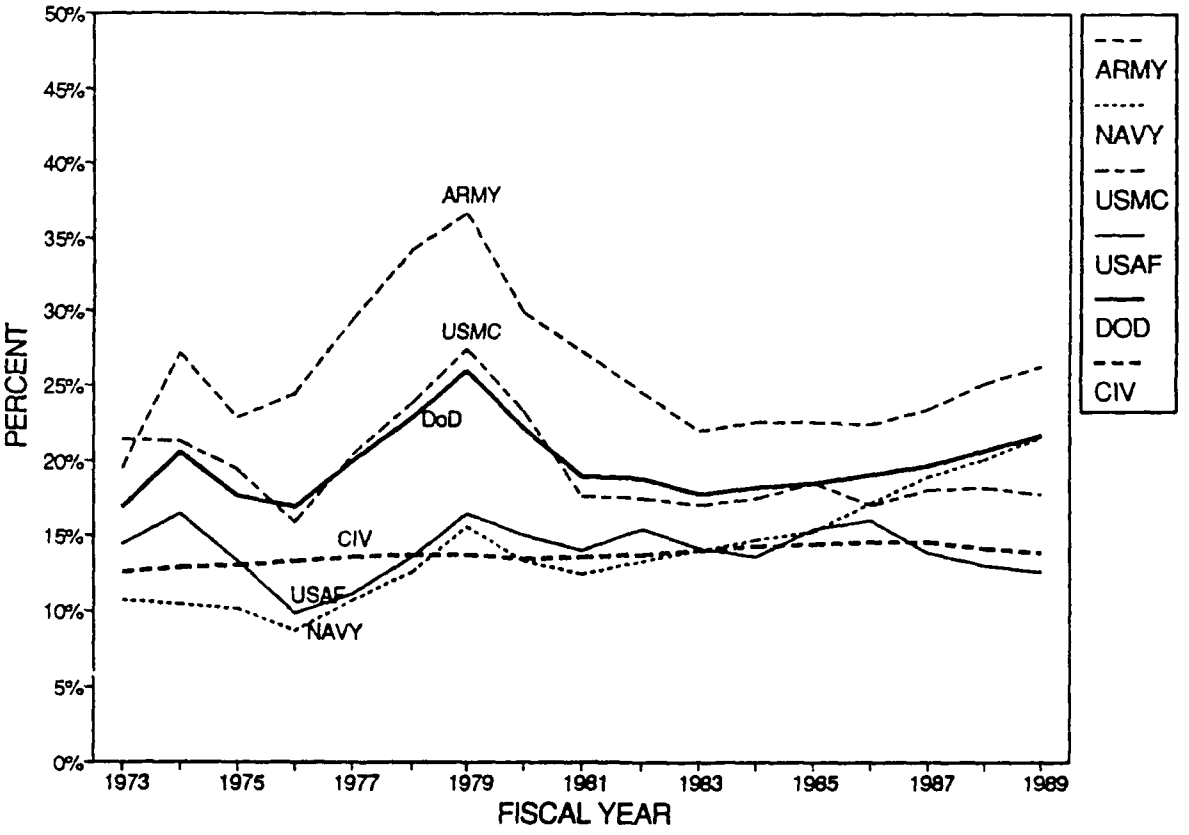
Source: [Ref. 6:p. 15]

Figure 2.3

Women as percentage of Non-Prior Service accessions, by Service, Fiscal 1973 - 1989

There is no lack of representation in the military by minorities, particularly blacks. In fact, the services have been a leader in implementing equal employment opportunity. As Figure 2.4 shows, black accessions have remained in the 20

percent range for the past ten years. By comparison, the percentage of blacks in the U.S. population is also presented. Except for the Air Force, the proportion of black accessions in the services tends to exceed the proportion of blacks in the population at around 13 percent.



Source: [Ref. 6:p. 19]

Figure 2.4

Blacks as percentage of Non-Prior Service accessions, by Service, with civilian comparison group, Fiscal 1973 - 1989

Another potential source of minority recruiting is the Hispanic population. As Table 2.2 shows, though, Hispanic recruits have been generally underrepresented in the military. In particular, in fiscal 1989, only about 6 percent of the services' accessions were Hispanic, compared with 11 percent of the 18-24 year-old population. [Ref. 6:p. 21]

TABLE 2.2

HISPANIC/NON-HISPANIC BACKGROUND OF NON-PRIOR SERVICE ACCESSIONS, BY SERVICE, AND CIVILIANS 18-24 YEARS OLD, Fiscal 1989 (PERCENT)

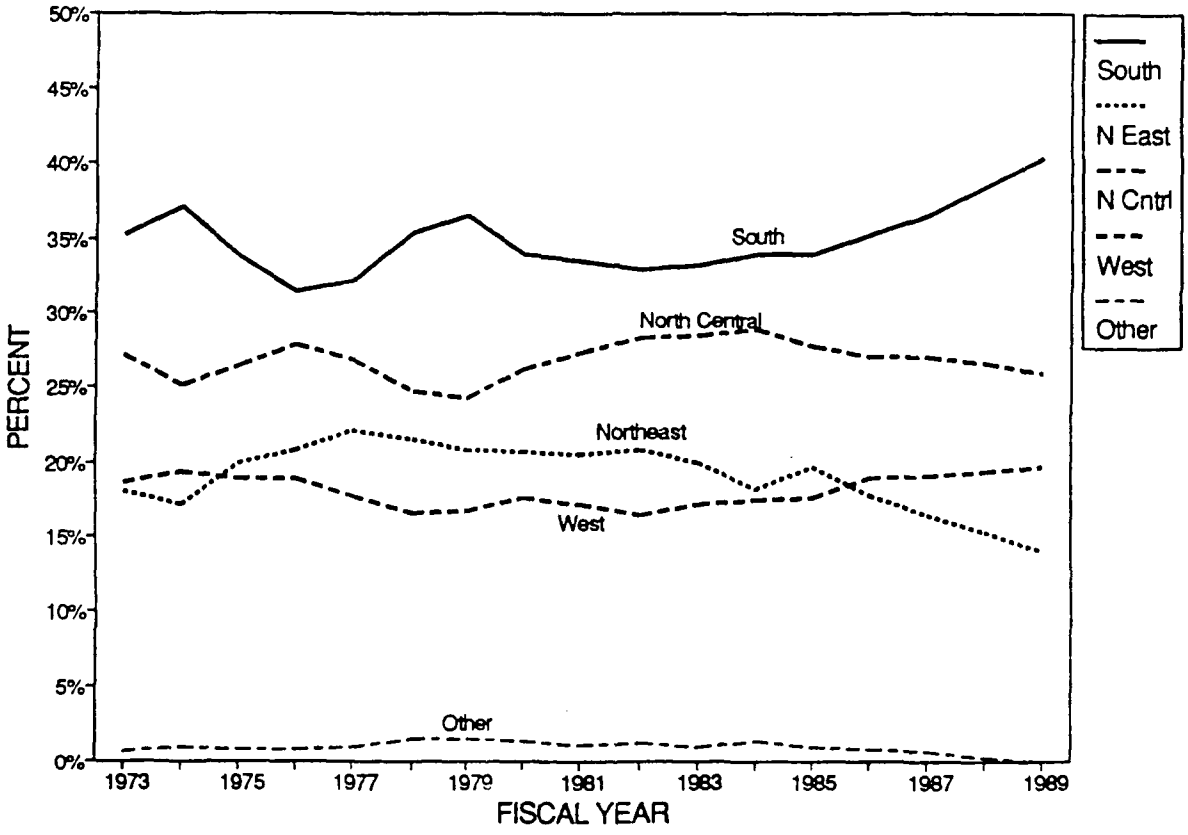
Hispanic/ Non-Hispanic	Army	Navy	Marine Corps	Air Force	DoD	18-24 Year Old Civilians
Hispanic	6	8	7	3	6	11
Non-Hispanic	94	92	93	97	94	89
Total	100	100	100	100	100	100

Source: [Ref. 6:p. 22]

C. GEOGRAPHIC MIGRATION

A shift of the populace to the "sun belt" has resulted in increases in accessions in the South and West regions of the United States, with corresponding declines in the North Central and Northeast regions. As Figure 2.5 illustrates,

about 60 percent of all accessions in 1989 came from the South and West.



Source: [Ref. 6:p. 36]

Figure 2.5

Non-Prior Service accessions by geographic region, Fiscal 1973 - 1989

Table 2.3 reveals some insights into the regional composition of 1989 accessions. While there was a degree of uniformity in the percentage of accessions in Tier I (high

TABLE 2.3

SELECTED STATISTICS FOR NON-PRIOR SERVICE ACCESSIONS BY REGION, DIVISION, AND STATE COMPARED WITH CIVILIANS 18-24 YEARS OLD, FISCAL 1989

CENSUS REGION CENSUS DIVISION STATE	Area's Percentage of All NPS Accessions	Area's Percentage of All 18-24 Year Olds	Representation Ratio	Percentage of Accessions in Tier I	Mean AFQT Percentile
NORTHEAST REGION	**14.15**	**20.80**	**0.68**	**92.1**	**59.0**
New England Division	*3.20*	*5.47*	*0.59*	*91.6*	*60.8*
Maine	0.54	0.44	1.22	91.2	60.8
New Hampshire	0.39	0.41	0.95	89.9	65.4
Vermont	0.20	0.17	1.17	92.0	62.3
Massachusetts	1.16	2.59	[illegible]	92.1	59.5
Rhode Island	0.21	0.40	0.54	89.8	61.2
Connecticut	0.68	1.45	0.47	92.3	59.5
Middle Atlantic Division	*10.95*	*15.33*	*0.71*	*92.2*	*58.5*
New York	5.06	7.75	0.65	90.4	58.4
New Jersey	1.52	3.20	0.47	92.7	57.8
Pennsylvania	4.37	4.38	1.00	94.2	58.8
NORTH CENTRAL REGION	**25.90**	**24.95**	**1.04**	**92.4**	**58.8**
East North Central Division	*18.28*	*17.58*	*1.04*	*92.7*	*58.1*
Ohio	5.21	4.65	1.12	93.5	57.7
Indiana	2.43	2.19	1.11	92.5	58.8
Illinois	4.18	5.02	0.83	92.2	56.7
Michigan	4.53	3.94	1.15	92.6	57.9
Wisconsin	1.93	1.77	1.09	91.7	61.9
West North Central Division	*7.62*	*7.37*	*1.03*	*91.8*	*60.3*
Minnesota	1.47	1.85	0.79	92.0	62.5
Iowa	1.24	1.06	1.17	93.3	61.6
Missouri	2.43	2.22	1.09	90.5	57.9
North Dakota	0.29	0.25	1.13	96.2	62.1
South Dakota	0.39	0.28	1.38	92.1	62.2
Nebraska	0.80	0.60	1.32	94.2	60.8
Kansas	1.02	1.10	0.92	89.7	59.7

TABLE 2.3 (CONTINUED)

CENSUS REGION CENSUS DIVISION STATE	Area's Percentage of All NPS Accessions	Area's Percentage of All 18-24 Year Olds	Representation Ratio	Percentage of Accessions in Tier I	Mean AFQT Percentile
SOUTH REGION	**40.29**	**33.65**	**1.20**	**92.2**	**56.3**
South Atlantic Division	*18.77*	*16.43*	*1.14*	*92.1*	*56.7*
Delaware	0.20	0.30	0.68	93.9	56.6
Maryland	1.66	1.90	0.87	93.3	57.6
D.C.	0.17	0.26	0.68	94.1	50.1
Virginia	2.52	2.33	1.08	92.7	58.0
West Virginia	1.00	0.71	1.41	92.4	56.7
North Carolina	2.81	2.62	1.07	94.4	54.2
South Carolina	1.79	1.27	1.41	92.9	53.0
Georgia	3.06	2.55	1.20	93.0	54.0
Florida	5.54	4.49	1.23	89.5	60.1
East South Central Division	*7.46*	*6.44*	*1.16*	*92.2*	*54.4*
Kentucky	1.79	1.48	1.21	91.2	56.5
Tennessee	2.02	2.38	0.85	92.0	56.3
Alabama	2.22	1.48	1.50	92.7	53.1
Mississippi	1.43	1.09	1.31	93.2	51.0
West South Central Division	*14.06*	*10.79*	*1.30*	*92.4*	*56.9*
Arkansas	1.39	1.01	1.38	92.3	55.4
Louisiana	2.52	1.80	1.40	92.6	53.4
Oklahoma	1.64	1.27	1.30	92.6	58.0
Texas	8.51	6.72	1.27	92.3	58.0
WEST REGION	**19.67**	**20.60**	**0.95**	**91.0**	**59.7**
Mountain Division	*6.54*	*5.13*	*1.27*	*91.8*	*60.6*
Montana	0.54	0.27	2.01	92.5	63.6
Idaho	0.58	0.34	1.67	91.4	62.7
Wyoming	0.30	0.18	1.73	95.5	62.5
Colorado	1.67	1.23	1.36	92.4	61.3
New Mexico	0.92	0.61	1.52	91.7	56.8
Arizona	1.56	1.30	1.20	90.4	60.8
Utah	0.51	0.73	0.69	92.7	58.3
Nevada	0.45	0.46	0.98	90.5	60.9

TABLE 2.3 (CONTINUED)

CENSUS REGION CENSUS DIVISION STATE	Area's Percentage of All NPS Accessions	Area's Percentage of All 18-24 Year Olds	Representation Ratio	Percentage of Accessions in Tier I	Mean AFQT Percentile
Pacific Division	*13.13*	*15.47*	*0.85*	*90.6*	*59.2*
Washington	2.20	1.51	1.46	91.2	62.6
Oregon	1.47	0.98	1.49	89.4	63.2
California	8.98	12.50	0.72	90.4	57.9
Alaska	0.18	0.17	1.06	91.8	60.0
Hawaii	0.29	0.30	0.97	96.3	53.1
UNITED STATES SUBTOTAL	**100.00**	**100.00**	**1.00**	**92.0**	**58.0**

Source: [Ref. 6:pp. 38-39]

school diploma graduates) across census divisions, and little difference in mean AFQT percentiles, the representation ratio[3] varied considerably. The states with the highest representation ratios in 1989 tended to be those states with the highest unemployment rates.[4] This seems to prove an intuitive maxim amongst recruiters: as unemployment goes up,

[3]Representation ratios are the percentage of enlisted accessions divided by the percentage of civilian youth in each area. A 1.00 ratio means that the area has the same proportion of accessions as of the youth population. A ratio <1.00 means fewer youths, proportionally, enlist in the military; a ratio >1.00 means more youths, proportionally, enlist.

[4]Those states with the lowest representation ratios--Massachusetts, Connecticut, Rhode Island, and New Jersey had 4.0, 3.7, 4.1 and 4.1 percent unemployment rates (respectively); those with the highest ratios--Alabama, Oregon, Washington, Idaho, Montana and New Mexico--had 7.0, 5.7, 6.2, 5.1, 5.9, 6.3 and 6.7 percent unemployment rates (respectively) while the national average was 5.3 percent in 1989.

of non-prior service (NPS) accessions roughly equal to their share of the 18-24 year-old populace. The South, on the other hand, provides about 40 percent of all NPS accessions while only having about 34 percent of the 18-24 year-old populace. Conversely, the Northeast Region only provides about 14 percent of the populace while having some 21 percent of the 18-24 year-old populace.

As we look at historical regional[5] recruiting patterns by individual service--as shown in Tables 2.4 through 2.7--we see strong similarities in regional accession patterns.

TABLE 2.4

PERCENTAGE OF ARMY NON-PRIOR SERVICE ACCESSIONS BY REGION, 1979 TO 1989

REGION	1979	1980	1891	1982	1983	1984	1985	1986	1987	1988	1989
NE	26.4	28.3	26.0	24.0	28.2	24.6	25.2	24.5	22.6	20.2	20.0
MW	20.7	22.5	27.5	25.2	32.3	28.7	27.9	26.9	24.7	26.0	24.4
S	36.5	33.3	34.2	25.9	36.1	33.4	32.9	33.9	35.4	38.5	40.0
W	16.4	15.9	12.3	24.9	3.4	13.3	14.0	14.7	17.3	15.3	15.6

Source: Defense Manpower Data Center

[5]Census Bureau geographic regions consist of the following states:
Northeast (NE): NY, MA, PA, CN, NH, ME, VT, NJ, RI
Midwest (MW): OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS
South (S): DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX
West (W): MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AL, HI

For the Army, the South showed the growth that has been observed for the other services, rising from about 36 percent of accessions to 40 percent. The West did not experience any real growth, remaining in the mid-teens--with the exception of 1983, which appears to be an anomaly. What may be of the most interest is that the Midwest has continued to provide 25 to 30 percent of the Army's accessions; not unexpectedly, the Northeast region has declined from the mid- to high- teens to only 20 percent in 1989.

TABLE 2.5

PERCENTAGE OF NAVY NON-PRIOR SERVICE ACCESSIONS

BY REGION, 1979 TO 1989

REGION	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
NE	35.7	34.1	34.7	36.0	34.4	33.5	33.3	32.4	29.6	29.5	26.6
MW	25.8	27.0	28.2	28.7	27.6	28.1	27.5	27.1	28.1	28.5	27.0
S	19.9	18.8	18.4	17.7	19.1	18.8	19.9	19.6	20.5	21.1	25.3
W	18.6	20.1	18.7	17.6	18.9	19.6	19.3	20.9	21.8	20.9	21.1

Source: Defense Manpower Data Center

For the Navy, a significant decline was observed in the Northeast from about 35 percent in 1979 to around 27 percent in 1989; and the contribution of the South increased from roughly 20 percent in 1979 to 25 percent in 1989. The West has hovered around the 20 percent mark throughout the period from 1979 to 1989, with the Midwest region holding generally constant in the high-twenties.

TABLE 2.6

PERCENTAGE OF AIR FORCE NON-PRIOR SERVICE ACCESSIONS

BY REGION, 1979 TO 1989

REGION	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
NE	24.5	23.5	23.7	23.1	23.4	23.3	23.3	20.4	21.2	17.8	16.2
MW	28.6	29.6	28.7	29.7	29.6	28.9	29.9	27.0	25.7	24.5	25.3
S	31.1	31.0	31.3	30.4	30.7	30.9	31.1	31.5	33.2	36.9	36.1
W	15.8	15.9	16.3	16.8	16.3	16.9	15.7	21.1	19.9	20.8	22.4

Source: Defense Manpower Data Center

Again, the Air Force shows growth in the South and West, a decline in the Northeast, with the Midwest staying fairly stable in the high- twenties.

TABLE 2.7

PERCENTAGE OF MARINE CORPS NON-PRIOR SERVICE ACCESSIONS BY REGION, 1979 TO 1989

REGION	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
NE	23.9	22.6	22.9	23.1	22.2	22.2	21.8	18.9	17.9	17.6	16.9
MW	22.9	24.7	25.7	26.9	27.4	28.5	26.8	27.4	26.4	26.8	25.8
S	35.7	35.2	32.8	33.6	32.3	32.0	33.5	35.3	37.7	37.0	38.4
W	17.5	17.5	18.6	16.4	18.1	17.3	17.9	18.4	18.0	18.6	18.9

Source: Defense Manpower Data Center

The Marine Corps shows moderate increases in th South and West, the Midwest holding its own, and the Northeast experiencing the declines that have been experienced by the other services. Of some interest is the fact that in 1989 well over one-third of non-prior service accessions came from the South region for all services except the Navy--its accessions were fairly balanced across the four regions.

D. SUMMARY

To summarize historical recruiting patterns, we see the following:

- The percentage of "quality" new accessions has increased over the past decade, and there is every indication that

enlistment standards and qualitative goals in that area will either remain constant or increase in the near future.

- Women in the armed forces continue to be under-represented; however, expended participation of this group is possible.

- Among minorities, blacks are overrepresented, while Hispanics continue to be under-represented--providing another untapped resource for the future.

- Geographic migration to the "sun belt"--the West and South--has provided the services with the majority of their recruits in recent years. Nevertheless, only the South provides more than its "fair share" in the sun belt, which may be economically related to unemployment. The opportunity to tap the other growing region, the West, may be possibile; the traditionally recruiting-poor Northeast--which also has a declining population.

It appears that the services will continue to strive to be representative of the populace, at least for the near future. Increasing roles for minorities and women in the military seem inevitable as these groups contribute significantly to the pool of available, qualified applicants in the 1990s and beyond. It is equally important to acknowledge that personnal quality does not have to be sacrificed to retain approximate population representation in the military.

With declining recruiting budgets, the services will have to "recruit smart." No longer will it be acceptable policy to simply flood highly populated areas with recruiters and offices. Regional migration is shifting the "bodies", granted, but economic realities--particularly in those states hit hardest by recession--must be taken into consideration as well. A representation ratio for a particular group is not always linked to unemployment. Indeed, it may be that youth

in Massachusetts, Rhode Island, Connecticut, New York, and New Jersey have been traditionally underrepresented in the armed forces. To expend significant dollars and person-hours in those states may provide a challenge in recruiting, or a lesson in futility, and should be a topic for further research.

III. LABOR FORCE TRENDS

A. PROJECTIONS

> "I never think of the future. It comes soon enough."
> - Albert Einstein

The Bureau of Labor Statistics has developed three alternative projections for population growth to the year 2000: low, moderate, and high. Under the moderate projection, the major labor force trends are:

1. The overall labor force, which numbered 83 million in 1970, is expected to be 70 percent larger in 2000--but the growth rate has been decelerating. Labor force growth rates by major age groups are shown in Table 3.1 below:

TABLE 3.1

GROWTH RATES OF U. S. LABOR FORCE

BY MAJOR AGE GROUPS, SELECTED PERIODS, 1970 - 2000

(PERCENT)

Age Groups (Years)	1970-80	1980-88	1988-2000
16-24	3.6	-1.4	0
25-54	2.8	3.0	1.6
55+	.4	0	1.2
TOTALS	2.6	1.6	1.2

Source: [Ref. 9:p. 2]

2. The percentage of blacks in the labor force is projected to increase to 12 percent by 2000, compared with 11 percent in 1988 and 10 percent in 1976.

3. The percentage of Hispanics will increase as a share of the labor force to 10 percent by 2000, compared with only 7 percent in 1988.

4. The percentage share of Asians and other groups will increase from 3 to 4 percent of the work force by 2000.

5. The median age of the labor force is aging. While the median age in 1988 was 35.9 years, by 2000 it is expected to be 39.3 years.

6. Labor force growth is expected to continue to remain slow between 1988 and 2000. The annual growth rate is anticipated to be 1.2 percent for the balance of the decade, while it was 2 percent between 1976 and 1988.

7. The labor force is expected to increase by a net addition of 19 million persons by 2000, compared with the net addition of 25 million from 1976 to 1988.

8. Women are projected to increase as a proportion of the labor force from 40 percent in 1976 to 47 percent by the year 2000.

9. The percentage share of the youth populace (between the ages of 16 and 24) in the labor force, which decreased from 24 percent in 1976 to 19 percent in 1988, is projected to fall even further to 16 percent in 2000. [Ref. 8:pp. 3 & 10]

B. THE YOUTH LABOR MARKET

The slowing of labor force growth is primarily due to two major factors: changes in the population and labor force participation rates. In the Census Bureau's "lowest" projections, the U.S. population is expected to grow to about 264 million through 2020, then begin to decline to 185 million in 2080. [Ref. 8] This slowing reflects the end of the "baby boom" generation[6]. [Ref. 9:pp. 4-5]

By the late 1970s, the "baby boom" generation had entered the work force and, as a group, had reached the prime working ages (25 to 54) by the year 1990. [Ref. 9:p. 4] The year 2000 will be the last year that the entire baby boom generation is in the prime working age group, and this group will steadily decline as a share of the population thereafter. However, the children of the baby boom generation, characterized as the "echo effect,"[7] will enter the labor force during the 1990s. This suggests that the younger labor force population--between 16 and 24--will increase steadily

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[6]The "baby boom" generation is comprised of those born between 1946 and 1964. The peak year for baby-boomers turning 18 years old -- the military's prime recruiting pool -- was 1979.
The "baby bust" generation begins with the end of the baby boom in 1965.

[7]The "birth dearth" is the U.S. fertility rate below the replacement level of 2.1 births per woman. The "echo effect" is the increase in the annual number of births of the baby boom generation women in there child-bearing years. The increase is due to their being more women in this generation, even though these women are having fewer children. For a complete discussion, see Ben J. Wattenberg's The Birth Dearth, Pharos Books, New York, NY, 1987.

between 1988 and 2000. [Ref. 9:pp. 4-5] The trough years--those years in which the growth is slowed--for various youth age groups are shown in Table 3.2.

TABLE 3.2

YOUTH LABOR FORCE TROUGH YEARS, BY AGE GROUP, FOR THE 1990S

AGE GROUP	YEAR OF TROUGH
16	1990
16 and 17	1991
18 and 19	1993
20 and 21	1995
18 to 24	1996

Source: [Ref. 9:p. 5]

As Table 3.2 shows, increases in the youth population by individual age groups will not occur uniformly throughout the 1990s. However, by the start of the 21st century, the total youth population--16 to 24--will be increasing. [Ref. 9:pp. 4-5]

The aging of the "baby boom" generation will cause the number of children under the age of five to decline from 1988 to 2000. [Ref. 9:p. 5] The "echo effect" will result in an increase in children between the ages of five and thirteen through 1996, and then will decline. Teenagers--14 to 17 years--will decline by about 700,000 in 1990, then increase by about two million by the year 2000 as shown in Table 3.3.

TABLE 3.3

PROJECTED YOUTH POPULATION BY AGE GROUP,

1988 AND 2000 (IN MILLIONS)

AGE GROUP (YEARS)	1988	2000
<5	18.3	16.0
5-9	18.0	18.1
10-13	13.4	15.4
14-17	14.0	15.3
18-24	26.9	25.2

Source: [Ref. 10:p. 18]

As the data suggest, there will be strong enrollment in elementary and middle schools through the turn of the century, with an increase in high school enrollment in the near future.

The overall effect of the "baby boom" has been to change the distribution or composition of the labor force. The result is that the share of the labor force 16-24 years old will be smaller in 2000 than in 1988, with 25-54 year-olds comprising a larger segment.

A change in labor force participation rates is the second major factor causing the slow growth of the labor force. Recent trends have changed labor force participation rates for older workers, young women, and black men. [Ref. 9:p. 6]

Older workers should increase as a proportion of the labor force as those born in the 1930s and early 1940s reach ages

over 55. Over the 1977-88 period, the labor force participation rate for 55- to 64-year-old men dropped by 7.3 percentage points. However, the participation rate is expected to rise by 1.1 percent per year during the 1988-2000 period. [Ref. 9:p. 6] Older women are expected to increase their participation, but at a much lower rate than men.

The high growth rates in labor force participation for women are projected to continue to slow through 2000, as shown in Table 3.4.

TABLE 3.4

LABOR FORCE PARTICIPATION GROWTH RATES

FOR WOMEN, BY AGE GROUP, SELECTED PERIODS, 1976 TO 2000

(PERCENT)

AGE GROUP (YEARS)	1976-85	1985-88	1988-2000
20-24	1.1	.4	.6
25-29	2.1	1.0	.9

Source: [Ref. 9:p. 7]

The trends show a marked slowdown in young women's participation rates as well as increased participation by older women in the labor force.

Finally, the participation rates for black men--25 to 54 years old--are projected to rise during the 1988-2000 period, as shown in Table 3.5.

TABLE 3.5

LABOR FORCE PARTICIPATION GROWTH RATES

FOR BLACK MEN, BY AGE GROUP, SELECTED PERIODS 1976 TO 2000

(PERCENT)

AGE GROUP (YEARS)	1976-85	1985-88	1988-2000
25-34	-2.1	0.5	0.3
35-44	-0.1	-1.6	0.8
45-54	0.6	0.5	0.1

Source: [Ref. 8:p. 7]

C. ENTRY LEVEL SHORTAGES

The labor force is expected to grow by a net increase--entrants minus leavers--of approximately 19 million persons, with 43 million joining the labor force between 1988 and 2000. It is projected that labor force entrants will be:

- comprised of slightly more women than men;
- 72 percent white, non-Hispanics;
- 15 percent Hispanic, with more Hispanic men than women; and
- 13 percent black, with slightly more black women than men.

Further, approximately 70 percent of those projected to be in the work force in 2000 are currently in the work force. [Ref. 9:p. 7] This only serves to reaffirm the notion that the labor force will continue to age.

Great concern has been reported regarding "shortages" of entry-level workers, particularly in geographic areas that

currently have low unemployment rates. [Ref. 11:p. 71] Competition among institutions--like the military, colleges and universities, and industry--will continue to be vigorous throughout the 1990s for entry-level workers between the ages of 16 to 24. The competition for this market has already intensified. In a recent Time article, it was reported that two of the largest fast-food chains are offering numerous incentives for teenage employees, including cash bonuses, college scholarships, a tuition-free fifth college year, and new career paths. [Ref. 5:pp. 17 and 18] Universities and industry are also stepping-up marketing efforts to recruit older workers, women, and part-time workers. [Ref. 5:p. 18] The New York Times reports that employers are already offering "higher wages and new creative fringe benefits to attract young workers"; "hiring workers under age 16"; "luring older workers out of retirement"; "increasing labor productivity"; and "moving to labor surplus areas." [Ref. 12:p. 2]

D. SKILL MISMATCHES

The shortages discussed above refer to shortages of the quantity of workers needed. But shortages of qualified workers may pose an even greater problem in the future.

Projected changes in the occupational structure of employment through this decade include the following:

1. One-half--8.7 out of 18 million--of all new jobs

added will be in the service-producing industries that encompass health, business, personal, and recreational services. [Ref. 10:p. 26]

2. Health care and business services will continue to be the most important industry sectors of the economy. Seven of the ten fastest growing occupations are health-related. One of every six new wage and salary jobs will be in business services. [Ref. 10:pp. 26-29]

3. Each of the three major occupational groups requiring the highest levels of education--(executive, administrative, and management; professional specialty; and technicians and related support occupations)--are expected to grow more rapidly than the growth rate for total employment. [Ref. 10:pp. 42-43]

4. Employment is projected to increase faster in occupational groups requiring more, rather than less, education. [Ref. 13:p. 63]

5. Among the major occupational groups, those projected to show above-average growth rates are the highly-skilled groups. Those occupational groups showing below-average growth rates are the less skilled groups. [Ref. 11:p. 69]

6. Educational requirements for occupations with faster growth rates--managerial, professional, and technical occupations--are higher; while the requirements for occupations with the slowest growth rates--operators, fabricators, and laborers--are lower. [Ref. 11:p. 69]

7. In general, workers will continue to be required over a broad spectrum of educational experience. However, the better paying jobs will require some post-secondary education or training. [Ref. 13:p. 63]

The prospect for future skill mismatches is already present in today's labor market. Two-thirds of employers consulted in a recent survey found that the current pool of entry-level job applicants were insufficiently prepared in basic skills. [Ref. 12:p. 2]

According to former Labor Secretary Elizabeth Dole, "The jobs of the next decade will be more complex, requiring a higher level of reasoning and basic skills". [Ref. 12:p. 3] So concerned was Secretary Dole about future job requirements and skills of workers that she established a Special Commission on Achieving Necessary Skills (SCANS). The Commission's charter was to prepare a report recommending national policies to prepare high school youths for entry into the labor market. [Ref. 14:p. 4]

E. SUMMARY

The labor force of the next decade--and beyond--is changing. As our work force ages and fewer young workers enter the workplace, there will be challenges to the military, colleges and universities, and private industry. Seeking out educated, skilled, entry-level workers will become a prime concern as their numbers are not increasing at the rate

required to meet the demand for their services. Moreover, shortages in skilled and educated workers are emerging as a major problem. Both types of shortages bear important implications for the military's recruiting and training policies. These implications are explored in Chapter six.

IV. DEMOGRAPHIC TRENDS

A. MINORITIES

It was noted above that racial and ethnic minorities are projected to represent an increasing share of the U.S. labor force through the year 2000. "One third of new entrants into the labor force over the next decade will be minority group members, more than half of whom are being raised in poverty." [Ref. 15:p. 3] Furthermore, blacks and Hispanics are currently over-represented in occupations that are projected to grow slowly or decline. [Ref. 11:p. 72] Blacks and Hispanics are also 35 percent more likely than whites to be employed in jobs projected to lose the most employees over the next decade. [Ref. 15:p. 3]

At the same time, lower scores on educational achievement tests [Ref. 11:p. 71] and lower high school completion rates for Hispanics and blacks [Ref. 16:p. 9] indicate that many are not prepared for the advanced education and training needed occupations with the faster growth rates. Indeed, this raises considerable concern, not only because Hispanics are becoming one of the fastest growing components of the labor force, but also because "under varying assumptions, Hispanic persons could account for between 20 and 54 percent of the U.S. population growth over the next 25 years." [Ref. 5:pp. 3-4]

This demographic trend is a consequence of traditionally higher fertility rates among minority women than among white women. [Ref. 17:p. 77] These changes are most evident now in the youth population. For instance:

1. In New York State, 40 percent of all elementary and high school students are either racial or ethnic minorities, this and will approach 50 percent in just ten years. [Ref. 18:pp. 3-4]

2. Fifty-three percent of the children enrolled in California public schools are racial or ethnic minorities--33 percent Hispanic, 11 percent Asian or other, and 9 percent black--making white school children a minority (47 percent). [Ref. 18:p. 4]

3. Asians (and "others") are the fastest growing minority group, rising from 1.6 percent of the population in 1985 to 3 percent in 2010. By the year 2000, California alone will have as many Asian-Americans as there were in the entire U.S. in 1985. [Ref. 5:p. 8]

B. IMMIGRATION

It is a commonplace observation that America is a country of immigrants. America was created by immigrants of virtually all nationalities, and it continues to attract immigrants from many countries. By virtue of over 200 years of immigration, the economies and dual histories of other countries are intertwined with the growth and development of the American system. [Ref. 19:p. 1]

Further, it has been predicted that by the year 2000, more than half of all new workers in the labor force will be minorities; half of these will be immigrants, especially Hispanics, who have grown five-times as fast as the rest of the population. [Ref. 20:p. 47] Julian L. Simon, in his book, Economic Consequences of Immigration, states: "We no longer get immigrant workers from the more advanced, industrialized nations; and, despite Immigration and Naturalization Service efforts to prevent the unskilled workers we do get from becoming a welfare burden, our newer immigrants are falling below the poverty line in even greater numbers." [Ref. 7:p. 25]

Several immigration trends that will affect future military manpower requirements are:

1. Annual documented immigration to the year 2000 will total approximately 560,000 annually. [Ref. 9:p. 4]

2. One of the assumptions in the mid-range projection of the Bureau of the Census is that the Immigration Reform and Control Act, which was not fully implemented until the end of 1988, will reduce the number of undocumented aliens. Therefore, it is projected the number of illegal or undocumented aliens will drop from 200,000 in 1988 to 100,000 in 1998. [Ref. 9:p. 4]

3. In the year 2000, the projected immigrant male population, ages 15 to 19, will total 370,000, a 30 percent

increase over the 1985 population in this age group. [Ref. 17:p. 76]

4. Immigrants are typically young adults (age 15 to 24) who have a strong negative effect on youth wages, especially minority youth wages, and a weak negative effect on youth employment rates. [Ref. 21:pp. 1-2]

5. It has been reported that by 1987, less than four percent of immigrants were admitted to the U.S. because of skills or occupations." [Ref. 21:p. 2] Most who entered legally did not enter to fill the U.S. job skills requirements, but entered under the family reunification category. [Ref. 11:p. 71]

The future labor force composition will be strongly affected by the total number and skill level of immigrants who will be competing with American youth for entry-level jobs. Skilled immigrants will also serve as substitutes for those skilled, aging members of the existing workforce. [Ref 21:p. 2]

C. REGIONAL MIGRATION

Immigration is a common fact that is close to the experience of many Americans. As a country comprised primarily of immigrants, we place a high value on the freedom of internal mobility. [Ref. 9:p. 1] During the first decade of the (AVF), the geographical distribution of accessions from each region remained fairly stable. [Ref. 6:p. 35] However, as Chapter II has shown, substantial changes in the

distribution of accessions by geographic region has occurred since the late 1970s.

The Census Bureau provides four alternative series of projections of the population of the 50 states and the District of Columbia for 1989 through 2010. The four alternative series of population projections for each state are based on different assumptions of future internal migration. While trends in all of the components of population change are subject to variation, and future trends are not easily predicted, internal migration is the most problematic in state-level projections. [Ref. 32:p. 1] Additionally, given the sensitivity of internal migration to changes in economic conditions, international migration, mortality, and fertility, internal migration changes can be both rapid and sizable.

Each of the projection series present results from different assumptions about future trends in the components of population change. None of the projections is intended as a forecast of future population, nor do they represent an exhaustive set of possible outcomes. The range of population projections for individual states in the four series varies widely between the four series of estimates and depends largely on internal migration.

The four assumptions on internal migration are summarized below:

1. Series A is a modified linear trend of the patterns of state-to-state migration observed from 1975 through 1988. It encompasses a trend analysis using all of the historical data, yet puts a limit on the most trended values. It is a composite method that attempts to combine four objectives, which are:

a. To use a long-time period so that random or abnormal fluctuations in the rates average out;

b. To use the most recent data available to reflect recent shifts in a state's migration patterns;

c. To continue recent changes in the migration rates so that emergent trends are captured; and

d. To force convergence in the migration rates so that a return to some equilibrium value is assured.

2. Series B is the average of the state-to-state migration rates observed from 1975 to 1988. It is a straightforward approach based upon the average--mean of the entire period--conditions over the longest time period (i.e., a state-to-state internal migration rate is equal to the arithmetic mean of its historical data set).

3. Series C is the average of the state-to-state migration rates observed from 1985 through 1988. This series uses the mean of the 1985 to 1988 time period--the most recent data--in an attempt to smooth abnormal fluctuations. It

assumes that each state-to-state rate equals the arithmetic mean of the historical data for years 1985-86, 1986-87, and 1987-88. Series C emphasizes recent changes that may signify lasting shifts in patterns of net migration.

4. Series D assumes zero net internal migration. This series shows what would occur to a state's population solely from the effects of fertility, mortality, and international migration alone. It provides a basis from which to measure the effects of any other projection that does include internal migration. [Ref. 32:pp. 3-10]

Table 4.3 shows the projections of the total resident population by region from 1989 to 2010, for each of the four series. Table 4.4 displays the corresponding percentages of the total population for each region.

TABLE 4.3

PROJECTIONS OF THE TOTAL RESIDENT POPULATION OF U.S. REGIONS, BY SERIES 1989 TO 2010 (IN THOUSANDS)

REGION	1989	1990	1991	1992	1993	1994	1995	2000	2005	2010
					SERIES A					
NE	50695	50850	51011	51175	51341	51504	51665	52419	53124	53801
MW	60089	60288	60443	60556	60636	60687	60712	60528	60110	56696
S	85545	86517	87485	88445	89389	90317	91227	95575	99678	103529
W	51404	52237	53045	53826	54582	55311	56015	59226	62174	65030
					SERIES B					
NE	50631	50707	50777	50841	50896	50941	50976	51005	50897	50763
MW	60025	60205	60374	60528	60669	60798	60914	61342	61668	61997

TABLE 4.3 (CONTINUED)

REGION	1989	1990	1991	1992	1993	1994	1995	2000	2005	2010
S	85624	86644	87636	88600	89534	90440	91317	95382	99101	102577
W	51453	52336	53197	54034	54848	55641	56412	60019	63421	66719
					SERIES C					
NE	50684	50814	50938	51056	51166	51266	51357	51662	51825	51961
MW	60072	60296	60510	60706	60889	61058	61213	61815	62289	62744
S	85547	86489	87404	88291	89149	89979	90781	94483	97857	101008
W	51431	52292	53132	53949	54744	55517	56269	59788	63114	66344
					SERIES D					
NE	59868	51179	51481	51767	52043	52304	52553	53583	54371	55028
MW	50286	60723	61148	61552	61940	62312	62665	64231	65584	66824
S	85304	85998	86673	87325	87950	88553	89132	91750	94113	96318
W	51277	51990	52684	53357	54013	54649	55271	58186	61018	63886

Source: [Ref. 32:pp. 15-18]

TABLE 4.4

PROJECTIONS OF THE PERCENTAGE OF TOTAL RESIDENT POPULATION OF U. S. REGIONS, BY SERIES, 1989 TO 2010

REGION	1989	1990	1991	1992	1993	1994	1995	2000	2005	2010
					SERIES A					
NE	20.46	20.35	20.24	20.15	20.06	19.98	19.90	19.58	19.31	19.07
MW	24.26	24.13	23.99	23.84	23.69	23.54	23.38	22.61	21.85	21.16
S	34.53	34.62	34.72	34.82	34.92	35.03	35.14	35.69	36.24	36.71
W	20.75	20.90	21.05	21.19	21.33	21.45	21.58	22.12	22.60	23.06

TABLE 4.4 (CONTINUED)

REGION	1989	1990	1991	1992	1993	1994	1995	2000	2005	2010
					SERIES B					
NE	20.44	20.29	20.15	20.01	19.89	19.76	19.64	19.05	18.50	18.00
MW	24.23	24.09	23.96	23.83	23.70	23.58	23.46	22.91	22.42	21.98
S	34.56	34.68	34.78	34.88	34.98	35.08	35.17	35.62	36.03	35.37
W	20.77	20.94	21.11	21.28	21.43	21.58	21.73	22.42	23.05	23.65
					SERIES C					
NE	20.46	20.33	20.21	20.10	19.99	19.88	19.78	19.30	18.84	18.42
MW	24.25	24.13	24.01	23.90	23.79	23.68	23.58	23.09	22.64	22.25
S	34.53	34.61	34.69	34.76	34.83	34.90	34.97	35.29	35.57	35.81
W	20.76	20.93	21.09	21.24	21.39	21.54	21.67	22.32	22.95	23.52
					SERIES D					
NE	20.53	20.48	20.43	20.38	20.33	20.29	20.24	20.01	19.77	19.51
MW	24.34	24.30	24.27	24.23	24.20	24.17	24.14	23.99	23.84	23.69
S	34.43	34.41	34.40	34.38	34.36	34.35	34.33	34.27	34.21	34.15
W	20.70	20.81	20.90	21.01	21.11	21.19	21.29	21.73	22.18	22.65

Source: [Ref. 32:pp. 15-18]

Series A is considered to provide the best "snapshot" look of projected regional migration trends because it encompasses a trend analysis and places extra weight on the most recent value. The summary of Series A regional projections for 1989 to 2010, as shown in Tables 4.3 and 4.4 indicate some general trends:

1. The South will continue to be the most populous region, with over one-third of the total U.S. population projected to reside in that region.

2. The West will continue to be the fastest growing region followed by the South.

3. The Midwest region will continue to be the third fastest-growing region.

4. The Northeast will continue to be the slowest growing region of the United States.

D. SUMMARY

The projections for the balance of this decade and into the 21st century show that the population of the United States will become even more ethnically and racially diverse. Indeed, a considerable increase in the labor force will come from immigrants--primarily Hispanics and Asians--with blacks comprising an ever-greater proportion of the workforce as well. While immigrants and minorities become a larger part of our labor pool, we also see shifts in the population--away from the northeast and northcentral regions of the country, towards the "Sun Belt" states in the South and West.

V. SOCIAL TRENDS

A. EDUCATIONAL ATTAINMENT

The "baby boom" generation is a highly educated generation that is passing through its peak child-bearing and child-rearing years, and is now entering its peak earning years.

Positive educational trends include:

1. The Bureau of the Census reports that the level of educational attainment has been steadily increasing for persons 25 years and older. [Ref. 31:p. 6]

2. Between 1975 and 1985, there was a decline in the proportion of black and Hispanic students at each level of education--elementary, high school, and college. [Ref. 15:p. 13]

3. Fourteen nations, including the U.S., have reported massive IQ gains--up to 25 points--over a single generation. [Ref. 5:p. 9]

4. Since 1980, the proportion of 16- to 24- year-olds who reported dropping out of school has declined. These dropout rate reductions have occurred regardless of race; however, blacks and Hispanics still had higher dropout rates than did whites in 1985. [Ref. 22:p. 55]

On the negative side:

1. Since 1983 there has been a downward shift in Scholastic Aptitude Test (SAT) scores, particularly in the verbal portion. This trend has leveled off somewhat in the 1980s. [Ref. 22:p. 69]

2. Test results show that American students, on the average, do not write well. Out of a possible score of 400, the average scores were 158 for 4th graders, 205 for 8th graders, and 219 for 11th graders. Students who spent more time watching television had lower writing achievement test scores than did those who watched less. [Ref. 22:p. 61]

3. In a 1981-82 international math comparison test of 8th grade students from 18 countries and provinces, the U.S. ranked 9th in arithmetic, 11th in algebra, 16th in measurement (above only Nigeria and Swaziland), 15th in geometry, 6th in statistics, and 13th overall. [Ref. 22:p. 64]

4. A 1985 literacy skills and reading test of young adults found that most young adults adequately perform tasks requiring basic literacy skills; however, nearly one-half are unable to do well at tasks of even moderate complexity--such as balancing a checkbook or using a map. [Ref. 22:p. 67]

5. "In a 1989 survey of 17 countries, 9th graders from the U.S. tied with students from Singapore and Thailand for 14th place in science achievement." [Ref. 23:p. 3]

6. In a recent assessment of mathematics and science, carried out by the Educational Testing Service, the U.S. ranked in the lowest grouping among 13 year-olds tested. [Ref. 24:p. 70]

7. Nearly one-fifth of 163 large companies reported that they are having problems finding people who can read well enough to qualify for an entry-level job. [Ref. 25:p. 8B]

Some analysts believe the U.S. could lose its already tenuous economic leadership by the end of the century because it has a " . . . shortfall of people in the work force with the reading, writing, and math skills required for today's jobs." [Ref. 25:p. 8B]

As previously mentioned, the most rapid occupational growth is expected in occupations that require some postsecondary education or training. For example, health and business services--both of which are projected to have significant job growth in the next twenty years--require that most of their employees have specialized training and education. Yet, the "evidence suggests that the work-force skills of many youngsters are declining at a time when new jobs are becoming increasingly sophisticated." [Ref. 25:p. 8B]

Analysis of occupational employment projections have indicated that blacks and Hispanics are overrepresented in occupations with the slowest rates of projected growth. Conversely, they are underrepresented in occupations projected to have the fastest rates of growth. [Ref. 13:p. 69] Additionally, "the decline in literacy is true of all demographic groups, but is particularly so for blacks and Hispanics." [Ref. 11:p. 70] These facts heighten the concern that the education and training preparation of blacks and Hispanics is inadequate to meet the more demanding jobs of the future. The trends also indicate a dearth of individuals

possessing the prerequisite skills to seek necessary postsecondary education or training.

Because Hispanics are one of the fastest growing components of the labor force, their low high school completion rates cause considerable concern. [Ref. 22:p. 52] As is shown in Table 5.1, high school completion rates for Hispanics have not increased much during the 1975-86 period; and there is no tendency seen in narrowing the gap. [Ref. 11:p. 71]

TABLE 5.1

EDUCATIONAL ATTAINMENT RATES FOR HISPANICS, BY LEVEL OF EDUCATION COMPLETED, 1975 TO 1986

YEARS	<4 YRS OF H.S.	4 YRS H.S. ONLY	4 YRS H.S. & SOME COLL	4 YRS COLL OR MORE
1975	48.3	30.7	12.2	8.8
1980	42.1	34.8	15.4	7.7
1985	39.0	34.0	16.0	11.0
1986	41.0	33.7	16.3	9.0

Source: [Ref. 4:p. 71]

Indeed, there appears to be good reason for some analysts to believe that the U.S. could lose even more of its economic leadership to Europe or Asia before the end of this century. [Ref. 25:p. 8B] America's rate of productivity has grown at a much slower rate in the past 10 to 15 years. [Ref. 26:p. 18] Education and training of the labor force play an important role in determining productivity growth. The

potential educational shortfall--and its negative implications for our productivity--highlight the importance of meeting high educational requirements. The decline in the abilities of the youth population implies that a smaller portion of the youth labor pool possesses the educational background to be trained in jobs that are becoming increasingly "high tech". [Ref. 17:p. 74]

B. APTITUDE

"The primary focus of enlistment screening has gradually shifted from physical/medical criteria to measures of aptitude and education." [Ref. 27:p. 13] As advances in technology accelerate, soldiers and sailors are being called upon to "operate more sophisticated weaponry and perform duties that demand comparatively greater skills in mechanical comprehension, arithmetic reasoning, problem-solving, and verbal fluency." [Ref. 27:p. 13]

The Random House College Dictionary defines "aptitude" as: "capability; innate or acquired capacity for something; talent; readiness in learning; intelligence." The military, on the other hand, defines it primarily as a score on the Armed Services Vocational Aptitude Battery (ASVAB). The ASVAB is composed of ten subtests which are used to measure general military trainability and to assess vocational aptitude for specific job categories. [Ref. 17:pp. 14-15] The index of general military trainability is the Armed Forces Qualification Test (AFQT) which was discussed in Chapter II.

In addition to the AFQT, the services also combine subtests to predict job training success. These aptitude composites are used primarily to determine vocational aptitude for entry into specific military occupations and "determining basic eligibility for entry into certain services." [Ref. 17:p. 17]

Table 5.2 shows how the various education and aptitude requirements for military enlistment affect the population of "eligible" men and women between the ages of 18 and 23.

TABLE 5.2

PERCENT OF U.S. POPULATION AGED 18 TO 23 ELIGIBLE FOR[8] ENLISTMENT BASED ON FISCAL 1984 EDUCATIONAL AND APTITUDE STANDARDS, BY SERVICE AND SEX

SEX	ARMY	NAVY	AIR FORCE	MARINES
MALE	76.3	75.0	62.6	68.3
FEMALE	78.3	78.1	60.4	46.4
TOTAL	77.3	76.5	61.5	57.5

Source: [Ref. 17:p. 21]

It is apparent that there are different degrees of enlistment selectivity between services. "Obviously, more stringent standards mean fewer qualified applicants." [Ref. 17:p. 19] Thus, 76 percent of young men would have qualified for the

[8]Eligibility for enlistment does not include the physical fitness, medical, and background or behavior (moral) standards.

Army--roughly three out of four--compared with 63 percent--less than two out of three--for the Air Force. Seventy-eight percent--a little more than three out of four--of young women would meet the Army's minimum requirements, compared with 46 percent--less than two out of four--for the Marine Corps. [Ref. 27:p. 79]

The discussion so far has been a brief background on aptitude tests and how they affect military entry standards. Predicting future aptitude trends over the next decade or quarter-century is a massive, if not impossible, task. However, if history is a guide, then analyzing past trends will give us a good foundation upon which to build our predictions.

Figure 2.1 in Chapter II presented the percentage of Non-Prior Service (NPS) accessions in AFQT categories I through IIIA since the establishment of the (AVF). The pattern of AFQT scores of recruits has been irregular during the volunteer era. For the first several years (1973-76), the services attracted roughly the same proportion of Category I-IIIA applicants. The latter part of the 1970s saw recruit quality plummet due to a miscalibration of the ASVAB.[9] In

[9]During FY 1976-80, the Armed Services were using a version of the enlistment test that incorrectly converted test raw scores to percentile scores. Because scores in the lower-ability levels were being overstated, over 300,000 ineligible or marginally eligible applicants were admitted to military service. Over time it became increasingly clear that something was wrong with the test results, as field commanders noticed a drop in the quality of recruits. In October of 1980 the test was correctly renormed. [Ref. 3:pp. 24-25; Ref. 1:p. 37]

general, "unknown effects of external factors largely determine who applies for service in the armed forces." [Ref. 27:pp. 46-47] However, the period from 1981 to 1989 saw a steady increase in the quality of new recruits as a result of President Reagan's initiatives to bolster U.S. defense capabilities, substantial military pay increases, improved educational benefits packages, and a growing popularity of the military among the youth population. [Ref. 30:pp. 13-14]

Given that numerous external factors affect accessions, the slow decline in the percentage of AFQT Categories I-IIIA accessions since 1987 can be at least partially explained by demographic changes in the youth population. "The recruiting patterns of the past few years are not a direct consequence of having proportionally more high quality applicants--but, more precisely, a result of having numerically more high quality applicants to choose from". [Ref. 27:p. 47] With the larger pool to choose from, the services can raise their minimum entry-level scores and raise the average new recruit aptitude. Conversely, when there is a smaller pool to draw from, minimum entry-level scores are lowered and quality decreases.

If the past is a good predictor of the future, then, as one analyst writes: " . . . the flow of applicants is constantly affected by unpredictable environmental forces; but the entry screens of the military, like the gates of a dam, compensate for those forces by opening and closing in reaction

to the flow and the needs of those on the other side." [Ref. 27:pp. 47-48]

C. SUMMARY

Over the coming years, significant challenges are faced by society, and by the military force charged with protecting that society. Our educational system has been tested and found wanting; at least our young people--particularly blacks and Hispanics--are not attaining standards enjoyed in Europe and Asia. As the youth labor pool shrinks and competition for skilled entry-level workers increases, just how far will the military need to "open the gates of the dam" to meet its manpower requirements? With a more technologically advanced military, just how low can the armed forces allow their standards to drop without sacrificing readiness? This issue is examined in the next chapter.

VI. IMPLICATIONS AND RECOMMENDATIONS

A. MANPOWER DEMAND IMPLICATIONS

What are military manpower requirements likely to be a decade--or more--from now? In the past, the might and influence of a nation was determined by the number of troops it could muster on the battlefield. As discussed in the introduction, nuclear weapons and sophisticated military technology have become necessary supplements to conventional forces to help deter global thermonuclear war. As Japan, and modern-day Europe, and OPEC nations have demonstrated, economic power is still at least as important as military power in exerting influence and protecting a nation's sovereignty. Nonetheless, the size of a nation's armed forces and its military hardware are still used as a measure of its power abroad.

The events of the past year--including "democratization" of Eastern Europe and Iraq's invasion of Kuwait--have created a new wrinkle in manpower planning. Even as lawmakers and DOD manpower decision-makers were preparing for drawdowns, the President was committing the U.S. to its largest deployment of troops since the Vietnam war. The ultimate effect has been to raise questions concerning immediate drawdowns, as well as to add an aura of uncertainty to future manpower planning:

> A commitment of a half-million troops to the Middle East was not something we had considered last summer when we decided to cut the military.. . . We are going to have to take another look at this and consider holding off on a major reduction in personnel if this might limit our options in the Persian Gulf. We will also have to consider whether an increase in personnel strength is warranted. [Ref. 34:p. 3]

In other words, the mandated cuts for fiscal 1991 are on hold, and the personnel cuts projected for the years after that time may not occur as previously planned. (See Chapter I, Table 1.1b, for the planned reductions). On the other hand, if the Persian Gulf Crisis resolved by this time next year, Congress may prescribe additional, deeper cuts for fiscal 1992 and beyond. The bottom line, then, is that force composition and manpower requirements are a moving target that cannot be accurately forecast--even for the current fiscal year, let alone 5 to 10 years in the future.

If history can provide a lesson, however, it is that tensions will likely remain--in one venue or another--for the near future. With its obvious threat to the economic security of the West and our Middle East allies, Saddam Hussein's "adventure" in Kuwait is a blunt rebuke to those who thought that winding down the cold war would necessarily create a significant "peace dividend." The Kuwait crisis may well confirm that the greatest external military threat to the United States in the future could be another reckless and well-armed Third World dictator. It is important, then, to try to envision the military establishment that the United

States will need to maintain to counter those, and other, threats.

The nuclear triad is likely to remain a part of America's strategic arsenal over the next decade or more. A credible nuclear deterrent based upon Trident submarines, land-based Intercontinental Ballistic Missiles (ICBMs), and manned bombers appears necessary to counter the Soviet Union's nuclear arsenal. On the other hand, forces that can project power ashore to protect our national interests must not be allowed to dwindle significantly. The Persian Gulf crisis provides evidence that we must have the requisite forces to counter conventional threats, whether in the deserts of Arabia, or in the jungles of Southeast Asia and Central America. Supplementing those ground forces are the air and sea transports to get them there expeditiously, air power for close air support, power projection, and air superiority, and naval forces for interdiction, power projection ashore and naval gunfire support. This means that the military cannot afford to become a "hollow force," unable to respond rapidly in the event of a crisis.

To the authors, the personnel cuts proposed for fiscal 1991 appear to be unlikely, and unless there is rapid resolution to the current crisis in the Middle East, a moderate increase in manpower is not out of the question. Even if reductions occur in fiscal years after 1991, maintaining a credible force to counter such conventional or

limited conflicts will require maintaining a force structure closely approximating that currently in place. With budget cutbacks a certainty, innovative manpower management policies will be necessary to ensure adequate manning and readiness.

B. MANPOWER SUPPLY IMPLICATIONS

If the need for large forward deployments declines, and active duty military manpower strengths decline commensurately, many of the policies governing recruitment, promotion, and organization will be drawn into question. Should standardized educational and aptitude requirements be raised to increase recruit quality, even though such changes greatly decrease the intake of minority recruits? If the military services can meet their recruiting goals with well-qualified men, will efforts be made to reduce the number of women and minorities in the armed forces? Will advances in military technology improve or diminish the opportunities to substitute women and civilians for uniformed males? Will a high-tech force put a lesser or greater premium on an experienced work force? Another issue involves career patterns. Should more emphasis be placed on occupational specialization, to maximize the efficiency of the fewer units we do maintain? Or should an occupational "generalization" be adopted to insure the interchangeability of career members within this smaller armed force? What is the appropriate mix of formal military schooling, on the one hand, and service in operational units, on the other?

Of great potential significance is the mix of active and reserve forces. In a post-Cold War world, does the U.S. need to maintain a large Army Reserve component, as we have now--one which was sized to meet the mobilization needs for a NATO/Warsaw Pact war--if a conventional war in Europe has become unlikely?

Over the next decade, technology is expected to have a marked influence on the armed forces. A key issue for all the services will be the extent to which the introduction of new systems will affect the number and character of military jobs. Will more or fewer people be required? Will the manpower skill mix change? Will recruits of the future need to be more, or less, qualified? The answers to these and similar questions will have strong implications for the policies affecting the supply pool of qualified and available recruits.

The anticipated changes in the population's demographics will affect the number of young men expected to qualify for military service, since blacks and Hispanics have historically been less successful than whites at meeting the educational and aptitude requirements for entry. [Ref. 30:p. 78] In 1980, about 76 percent of white men had completed high school by the age of 23, compared with only 59 percent of blacks and 54 percent of Hispanics. [Ref. 27:pp. 68-69] Currently, it is estimated that the mean AFQT percentile score for white youth (nationwide) is 56. By comparison, the mean AFQT percentile score for Hispanic youth is 31, and the score for

blacks is 24. [Ref. 33:p. 77] Table 6.1 shows that a substantially smaller proportion of minorities than whites would be able to meet the minimum standards for entry into the armed forces.

TABLE 6.1

PERCENTAGE OF U.S. POPULATION AGED 18 TO 23 ELIGIBLE FOR ENLISTMENT BASED ON 1984 EDUCATIONAL AND APTITUDE STANDARDS, BY SERVICE, SEX, AND RACIAL/ETHNIC GROUP

SEX & RACIAL/ ETHNIC GROUP	ARMY	NAVY	MARINES CORPS	AIR FORCE
MALE				
WHITE	83.9	82.3	76.0	71.3
BLACK	40.7	41.4	32.2	21.3
HISPANIC	52.8	51.3	45.0	37.5
FEMALE				
WHITE	86.0	85.3	54.4	69.6
BLACK	45.5	48.1	13.1	21.7
HISPANIC	52.5	51.2	18.0	27.9

TABLE 6.1 (CONTINUED)

SEX & RACIAL/ ETHNIC GROUP	ARMY	NAVY	MARINES CORPS	AIR FORCE
TOTAL				
WHITE	84.9	83.8	65.4	70.5
BLACK	43.1	44.8	22.6	21.5
HISPANIC	52.7	51.3	31.7	32.7

Source: [Ref. 27:pp. 71, 74, 167-168]

Based on the 1984 education and aptitude standards shown Table 6.1, less than one-half (41.3 percent) of black men and slightly over one-half (51.3 percent) of Hispanic men would have qualified for enlistment in the Navy. By comparison, over three-fourths (83.8 percent) of white men would have qualified. This trend is mirrored in the statistics for women. Although 86 percent of white women would have been eligible for enlistment in the Army, only 45.5 percent of black and 52.5 percent of Hispanic women would have been qualified.

As the 18-24 year old cohort of young men "bottoms out" in 1995, it can be expected that fewer men will meet the military's basic enlistment requirements--given that the present educational and aptitude criteria remain the same. As discussed in previous chapters, this decline will be more prominent among disadvantaged youth and minorities who may

lack the educational preparation needed to qualify for the military's increasingly demanding jobs.

The relevant issue is whether the current population and projected changes in the future population will sustain the volunteer military in peacetime. As the number of young Americans and their technical abilities decline, the requirement for a more technically-adept recruit is growing. The difficult challenge for recruiters to fill the ranks of the military can be shown by examining Table 6.2, which follows one age group through time--excluding those who are not likely to enlist (college-bound males), and those who cannot enlist because they are disqualified for physical, mental, or moral reasons.

TABLE 6.2

NUMBER AND PERCENTAGE OF QUALIFIED AND AVAILABLE MALES REQUIRED ANNUALLY FOR MILITARY SERVICE, 1984-88 AND 1991-95, ASSUMING NO CHANGES IN ENTRY STANDARDS (IN THOUSANDS)

ITEM	1984-88	1991-95
TOTAL NONINSTITUTIONALIZED 18 YEAR OLD MALES:	1,800	1,612
MINUS NONAVAILABLE COLLEGE STUDENTS:	525	464
MINUS UNQUALIFIED MALES:	526	461
EQUALS QUALIFIED AND AVAILABLE MALE POOL:	749	687

TABLE 6.2 (CONTINUED)

ITEM	1984-88	1991-95
TOTAL MALE RECRUIT REQUIREMENT:	385	376
ACTIVE FORCES:	287	278
RESERVE FORCES:	98	98
PERCENTAGE OF POOL REQUIRED:	51	55

Source: [Ref. 30:p. 81]

As shown in Table 6.2, during the period 1984-88, an average of about 1.8 million men turned 18 each year. Based on past experience, some 525,000 of them were considered "college-bound" students. Another 526,000 would fail to meet the minimum physical, moral, or aptitude standards for entry into the military. To maintain an active military force of about 2.1 million and a reserve force of roughly 1.0 million, about 385,000 men would have to be recruited annually--287,000 active and 98,000 reserve--which equates to about 51 percent of the qualified and available pool of 18-year-old men. [Ref. 30:p. 81]

If the Congress does not proceed with active and reserve force reductions due to the Persian Gulf crisis--as indicated in recent comments by the Chairman of the Senate Armed Services Committee, then the 1991-95 annual requirement for recruits jumps to 60 percent of the qualified and available

population.[10] Finally, if technological advances place a larger requirement on recruiting those who can absorb more technical training, then the qualified and available pool is reduced even further. Here, the 1991-95 annual requirement for recruits would increase to about 70 percent of the qualified and available population.[11]

Just as the qualified and available pool of youths is affected by education and aptitude requirements, it is also affected by the Census regional population distribution. Table 6.3 shows the estimated percentage of American youth who would have been expected to qualify for enlistment in FY 1981 by Census region. The results presented demonstrate that there are substantial differences for the geographical areas represented. For example, in the South and West only 58 percent and 67 percent, respectively, of young men and women would have qualified for enlistment in the Navy. This is in contrast to the Northeast and Central regions, where over 70 percent would have qualified.

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[10]Based on increases to the active force of 9,000 and 15,000 to the reserves for a total annual male recruit requirement of 410,000.

[11]Based on an increase in mentally unqualified males to 486,000 for a total of 531,000 unqualified males.

TABLE 6.3

FY81 ESTIMATED PERCENT OF AMERICAN YOUTH (18-23 YEARS) WHO WOULD QUALIFY FOR ENLISTMENT BY CENSUS REGION AND SERVICE, FISCAL 1981

CENSUS REGION	ARMY	NAVY	MARINE CORPS	AIR FORCE
NORTHEAST	81.4	72.4	64.8	66.9
NORTH CENTRAL	81.9	71.1	64.5	66.6
WEST	78.3	67.3	61.4	62.9
SOUTH	70.0	58.4	51.0	52.9
TOTAL	77.3	66.6	61.5	59.6

Source: [Ref. 27:p. 81]

As Mark Eitelberg pointed out in his study for the Department of Defense, Screening for Service: Aptitude and Education Criteria for Military Entry:

> The proportions of 'qualified' American youth who reside in the South--the traditional recruiting base for the Armed Services, where pro-military sentiments are said to be the strongest, and where most military installations are situated--appear especially low when compared with the qualification rates of other geographical areas. [Ref. 27:p. 83]

As discussed above, it appears that the pool from which the services will draw new recruits is dwindling, making it more and more difficult to meet present or future manpower requirements.

C. RECOMMENDATIONS

The qualified and available population, as defined earlier, excluded certain categories of individuals. Changes in recruitment policies and entry standards could bring some of these categories into the pool, thus increasing the number of potential accessions. Other ways to increase the supply of qualified and available recruits are programs designed to attract graduates of two-year junior or community college programs, or to adjust educational and test score entry requirements to tap some of the "unqualified men" indicated in Table 6.2.

Increasing skill requirements brought about by new technologies could well exceed the capabilities of new recruits in the near future. Numerous ways to counter this possible trend have been proposed, including:

- increasing recruitment incentives,
- expanding the role of women,
- reinstating a conscription program,
- increasing financial and educational benefits to attract needed technical skills,
- reducing the level of hardship, or increasing benefits related to quality of life issues, and
- substituting civilians for military personnel where possible. [Ref. 28:p. 83]

Advances in technology--especially the growing dependence on push-button electronic warfare--might offer encouragement to proponents of a wider role for women in the military. However, closer analysis reveals that female participation in

a "high tech" military will be limited due to rather sharp differences between the sexes in eligibility for a variety of technical occupations. Table 6.4 shows the percentage of young people (18 to 23 years old) who would qualify in the four major aptitude areas.

TABLE 6.4

PERCENTAGE OF U.S. POPULATION (18 TO 23 YEARS OLD) WHO WOULD QUALIFY FOR SELECTED MILITARY OCCUPATIONS BY SEX

APTITUDE AREA	SPECIALTY	MALE	FEMALE
MECHANICAL	NAVY MACHINISTS MATE	66.3	44.4
ELECTRONICS	NAVY ELECTRONICS TECH	43.3	25.2
GENERAL	ARMY MILITARY POLICE	69.5	68.5
ADMINISTRATIVE	NAVY YEOMAN	40.5	53.3

Source: [Ref. 30:p. 120]

Table 6.4 shows that the ability of women to qualify for positions in the administrative field surpasses that of their male counterparts--53 percent for women; 40 percent for men. In general aptitude areas, roughly 70 percent of both sexes would qualify. However, in mechanical and electronic aptitudes, men enjoy an overwhelming edge over women. Moreover, the proportionally large differences in test scores between men and women would seem to imply that women will continue to be disproportionately relegated to the military's "low tech" skills.

Another factor may also be at work here. The continuing reluctance on the part of politicians and military leaders to place women in combat positions will limit them to serve in traditionally-female occupations. As one writer observes:

> Further use of this option [removing the combat restriction for women] will force consideration on a subject elected and appointed officials avoid like the plague: exposing women to death or capture on the battlefield. [Ref. 28:p. 83]

Use of civilians to replace uniformed personnel has actually been going on for some time, and some believe that the military could not function without civilians. Increasing the dependence on civilian workers has occurred mainly because, in certain occupations, civilian labor costs are lower than military personnel costs. Moreover, the military services have traditionally depended on contracted "tech reps" to support new weapons or systems deemed to be too sophisticated for military personnel to maintain. [Ref. 30:p. 123] However, in time of war, the ability to retain civilians in potentially hazardous locations is questionable. There is a risk tha. the services will become so accustomed to contractor support that they fail to adequately develop their own in-house capabilities. The prospect that civilian employees might choose to strike, leave their jobs, or fail to perform duties as ordered during a crisis further questions their dependability. We do recommend, however, that cost effectiveness studies be continued in the area of transferring Combat Logistic Force (CLF) ships to the Military Sealift

Command, where reduced-manning and civilian crews are utilized. Savings in this support area might be better used to support manning of combatant vessels.

Quality of life issues--including educational benefits, recruiting incentives, family support centers, and child care--remain a top priority in Congress. In the fiscal 1991 House Defense Authorization Act (HR 4739) the committee stated that it was:

> . . . committed to the preservation and enhancement of quality family programs. Few factors translate as directly to combat readiness as do healthy families that have benefited from an environment where family welfare is a top priority. Family welfare and combat readiness go hand-in-hand. [Ref. 35:p. 281]

Quality of life issues that increase retention rates reduce the annual demand for new recruits, while changes in the occupational needs of the armed forces have made experience even more valuable. By retaining a larger proportion of their personnel--especially those in high skill occupations--the services build a more experienced, and hence a more productive, work force and save money as well. [Ref. 30:p. 127]

Strategic placement of recruiting offices will also be of importance in the decades to come. Coupling Census projections of population migration with historical recruiting data should assist the services' recruiting commands in this area. It would appear that those regions with the highest projected population growth--the South and West--will have

the greatest number of recruits over the next decade. Cost effectiveness studies--particularly in the area of diminishing marginal returns in, say, the Northeast, where enlistment in the military is not viewed with great favor--are recommended to assist in determining where to focus recruiting assets.

The Persian Gulf crisis provides a ready-made "laboratory" for manpower analysts, and it can be used to help forecast future manpower demands. The following areas are recommended for further study:

1. The effect of mobilization of the Reserves, and the readiness implications of round-out brigades on deployed Army divisions.

2. Potential and/or perceived problems arising among civilian crewmembers operating Military Sealift Command or civilian-contracted ships in a war zone.

3. The impact of women serving in operational units--in all services--during the crisis.

4. The effect of a disproportionate number of minorities--blacks, in particular--serving in front line units on the media, public opinion, and, ultimately, support for the U.S. commitment, both in Congress and with the public.

5. The impact of a protracted deployment of forces--and potential conflict--on recruiting and retention rates.

D. SUMMARY

The balance of this century and the early 21st century will provide military manpower analysts, planners, and

decision-makers a plethora of problems. Of these, the shrinking pool of qualified young men, the services' increasing skill and educational requirements, and an ever-changing threat are but a few. Those who are charged with establishing realistic recruiting and retention goals to meet the nation's defense requirements will need to allocate dwindling resources even more wisely than in the past. Those that have the responsibility of determining force structure will have to look beyond the issues of how many divisions to field or carrier battle groups to deploy--to the possibility of making drastic changes in the complexion of our active/reserve, male/female, and uniformed/civilian manpower mixes.

VII. CONCLUSIONS

The last decade of this century and the dawning of the 21st century promise to bring fundamental changes to the armed forces of the United States. Indeed, it is too early to predict what steady-state force structure will be in place by the year 2000. There is some certainty, however, in our prediction that the Department of Defense's budget will be diminishing annually over the coming years. Fiscal realities and lessening of tensions between the U.S. and the Soviet Union will ultimately lead to force reductions--although to what extent is uncertain.

Further, the increasing requirement for skilled technicians in a "high tech" environment will require innovative measures to compete with private industry, and the nation's educational institutions. Indeed, to retain near-parity with the private sector it is most important that military pay and benefits not be allowed to deteriorate. Ensuring that quality of life issues remain a priority in Congress should help to avoid lower retention rates, particularly if reenlistment incentives--such as the selective reenlistment bonus--are retained.

One of the defense establishment's greatest challenges, however, will be to sustain a high degree of readiness in an era of decreasing dollars. The strategic placement of recruiting assets and the possibility of substituting

civilians for uniformed personnel may help to meet this challenge and deserve continuing research.

It is likely that America's military will be required to meet various contingencies--such as Iraq's invasion of Kuwait--both expeditiously and forcefully to ensure world peace. Therefore, it is imperative that all of us who possess an interest in a strong defense continue to examine ways to increase the efficiency and effectiveness of manpower programs. Further study of the labor orce, demographic, and social trends explored here wil help to clear a path for informed decision-making in the future.

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